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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,590	04/21/2004	Yi-Qun Li	034172-017	6712

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EXAMINER

KOSLOW, CAROL M

ART UNIT PAPER NUMBER

1755

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/829,590

Applicant(s)

LI ET AL.

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/21/04, 11/9/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) as follows:

This application is claiming the benefit of a provisional application under 35 U.S.C. 119(e). However, this application was not filed within twelve months from the filing date of the provisional application, and there is no indication of an intermediate nonprovisional application that is directly claiming the benefit of the provisional application and filed within 12 months of the filing date of the provisional application.

Note: If the day that is 12 months after the filing date of the provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, the nonprovisional application claiming the benefit of the provisional application may be filed on that next succeeding business day.

The drawings are objected to because the individual graphs should be labeled in figures 1 and 8. It is noted that the specification teaches figure 1 has parts a-d. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be

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labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The disclosure is objected to because of the following informalities: In paragraph [0005], "(????)" needs either to be deleted or explained. The conjunctions between the elements defining A, B and M is missing. Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The process of claims 11 and 18 are not found in the specification. Claims 4-9 teach the coercive field is "about" a value and table 1 and paragraphs 25 and 26 teach the coercive field is an exact value. The specification fails to provide antecedent basis for "about". The claimed saturation magnetizations of claims 4-9 are not taught in the specification. The specification teaches residual magnetization. Finally, the specification does not teach the claimed elements of Y, Gd, Ta, W, Nb, Al, Bi, Cr and V.

Claims 1-18 are objected to because of the following informalities: The formulas of claims 1, 4-9, 12, 15, and 16 should be rewritten using subscripts. In claims 1, 2, 10-13, 17 and 18, there is no conjunctions in the claimed lists of elements. In claims 3 and 14, "material" should not be capitalized. In the last line of claims 1 and 12, "and" should not be capitalized. In claims 10 and 17, "s single phase" should be "a single phase" and "sigle" should be "single". In claims 10, 11, 17 and 18, "of" is missing after the phrase "metal oxides". Finally, it is suggested to rewrite step 1 of claims 10 and 17 so it is clear the process is selecting metal oxides in

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amounts to provide the desired stoichiometry of the final perovskite oxide. Appropriate correction is required.

Claims 10, 11, 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for producing ferromagnetic perovskite oxides having the formulas $(A_{1-x}M_x)BO_3$ and $A(B_{1-x}M_x)O_3$, where $0 < x < 0.15$ does not reasonably provide enablement for any ferromagnetic perovskite oxide containing the listed metals. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The claims recite processes for making ferromagnetic perovskite oxides. This encompasses any ferromagnetic perovskite containing the metals, such as $Pb(Fe_{2/3}Nb_{1/3})_xTi_yZr_zO_3$, where $x+y+z=1$. However, the specification only teaches the producing oxides having the formulas $(A_{1-x}M_x)BO_3$ and $A(B_{1-x}M_x)O_3$, where $0 < x < 0.15$. Such a limited disclosure does not support the breadth of the instant claims. The examiner suggests the incorporation of these formulas into the respective claims.

Claims 3-11 and 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10 and 17 are duplicate claims. Claims 11 and 18 are duplicate claims. Claims 3, 14 and 15 are improperly depend on claims 1 and 12 respectively. The x range in claims 3 and 14 are broader in scope since they include the end points of 0 and 0.15. If they exclude the end points, then these claims do not further limit claims 1 and 12 respectively, since they are identical to the x value range in the independent claims. The formula in claim 15 is outside that

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of claim 12 since claim 12 teaches the maximum amount of Fe is less than 0.15 and claim 15 teaches the amount of Fe is 0.75. Claims 4-9 recite the limitations "said saturation magnetization" and "the coercive fields". There is insufficient antecedent basis for these limitations in the claims or in claim 1. Claims 15 and 16 recite the limitations "said magnetic Curie temperature" and "the coercive fields". There is insufficient antecedent basis for these limitations in the claims or in claim 12. Claims 11 and 18 are indefinite since the composition of the target is unclear. It is unclear if the target is a mixture of the claimed oxides which will form the perovskite or if it is composed of the perovskite.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 12 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,641,940. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed formula in the patent overlaps that claimed in this application.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chemical Abstract citation 134:140214 for the article by P'rvanova et al.

This abstract teaches perovskite oxide materials having the formula (1-x) BaTiO₃*xNiTiO₃, where x is 0.05, 0.1, 0.15. This formula can be rewritten as Ba_{1-x}Ni_xTiO₃. The reference clearly teaches the claimed material. Therefore one of ordinary skill in the art would expect it to be inherently ferromagnetic, absent any showing to the contrary.

Claim 1 is rejected under 35 U.S.C. 102(a or b) as being clearly anticipated by Chemical Abstract citation 140:311312 for the article by Srivastava et al.

This reference is applicable either under 35 USC 102(a) or (b) depending on the publication month which the Examiner was unable to determine.

This abstract teaches perovskite oxide materials having the formulas Sr_{0.9}Fe_{0.1}TiO₃ and Pb_{0.9}Fe_{0.1}TiO₃. The reference clearly teaches the claimed material. Therefore one of ordinary skill in the art would expect it to be inherently ferromagnetic, absent any showing to the contrary.

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Claim 12 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chemical Abstracts citation 132:312137 for the article by Langhammer et al.

This reference teaches perovskite oxide having the formula $\text{BaTi}_{1-x}\text{Mn}_x\text{O}_3$, where $0 < x \leq 0.05$. The reference clearly teaches the claimed material. Therefore one of ordinary skill in the art would expect it to be inherently ferromagnetic, absent any showing to the contrary.

Claims 12-14 and 16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by JP 4-56080.

The abstracts and formulas in the reference teach perovskite oxides having the formula $\text{ATi}_{1-x}\text{M}_x\text{O}_3$, where A is $\text{Ca}_{1-y}\text{Sr}_y$, y is 0-1 and when M is Fe or Co, x is $0 < x \leq 0.05$ and when M is Cr, Mn or Ni, x is $0 < x \leq 0.03$. Page 442 exemplifies $\text{SrTi}_{0.95}\text{Fe}_{0.05}\text{O}_3$. The reference clearly teaches the claimed material. Therefore one of ordinary skill in the art would expect it to be inherently ferromagnetic and that $\text{SrTi}_{0.95}\text{Fe}_{0.05}\text{O}_3$ would inherently have the claimed properties, absent any showing to the contrary.

Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,641,940.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

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This patent exemplifies perovskite oxides having the formulas $\text{Ba}_{0.6}\text{Sr}_{0.4}\text{Ti}_{0.9}\text{V}_{0.1}\text{O}_3$ and $\text{Ba}_{0.6}\text{Sr}_{0.4}\text{Ti}_{0.92}\text{Ta}_{0.07}\text{Cr}_{0.01}\text{O}_3$. The reference clearly teaches the claimed material. Therefore one of ordinary skill in the art would expect it to be inherently ferromagnetic, absent any showing to the contrary.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,641,940.

There is evidence in this file showing that the invention was owned by, or subject to an obligation of assignment to, the same entity as U.S. patent 6,641,940 at the time this invention was made, or was subject to a joint research agreement at the time this invention was made. However, this patent additionally qualifies as prior art under another subsection of 35 U.S.C. 102, and therefore, is not disqualified as prior art under 35 U.S.C. 103(c).

Applicant may overcome the applied art either by a showing under 37 CFR 1.132 that the invention disclosed therein was derived from the invention of this application, and is therefore, not the invention "by another," or by antedating the applied art under 37 CFR 1.131.

This reference teaches perovskite oxides having the formulas $\text{MTi}_{1-x}\text{V}_x\text{O}_3$, where M is Ba and/or Sr and x is 0.02-0.3. This composition overlaps that claimed. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974);

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In re Fields 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed composition. The reference overlaps the claimed material. Therefore one of ordinary skill in the art would expect it to be inherently ferromagnetic in the overlapping range, absent any showing to the contrary.

Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/40058.

U.S. patent application publication 2005/0006249 is the English equivalent for WO 03/40058.

This reference teaches producing a perovskite oxide having the formula $(\text{Ln}, \text{A})(\text{Ti}, \text{Fe})\text{O}_3$ where Ln can be La and A is at least one of Ca, Sr and Ba by mixing oxides of Fe, Ti, A and Ln in the desired stoichiometry and firing the mixture at a time and temperature sufficient to form a single phase of the oxide, where the firing atmosphere can be an inactive gas atmosphere (para [0088] and examples). It is notoriously well known that argon gas is an inactive gas that is used as an inactive gas atmosphere. Therefore one of ordinary skill in the art would have found it obvious to use argon as the taught inactive gas atmosphere. The reference suggests the claimed process.

Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 5,434,742.

This reference teaches forming ferroelectric perovskite oxide thin films by forming a target of the ferroelectric oxide and then depositing a thin film of the ferroelectric oxide by sputtering in an argon atmosphere at 600°C (examples). This reads upon the claimed process.

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The taught ferroelectric perovskite oxide can contain lead, tungsten and iron or cobalt or lead niobium and manganese, iron or nickel (claim 9). The reference suggests the claimed process.

Claims 4-9 and 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

There is no teaching or suggestion in the cited art of record of materials having the claimed formulas.

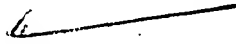
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
July 1, 2005


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